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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**FORM 8-K**

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**CURRENT REPORT**

**Pursuant to Section 13 or 15(d) of The Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported): July 23, 2008**

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**Arrowhead Research Corporation**

(Exact name of registrant as specified in its charter)

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**0-21898**

(Commission File Number)

**Delaware**  
(State or other jurisdiction  
of incorporation)

**46-0408024**  
(IRS Employer  
Identification No.)

**201 South Lake Avenue, Suite 703, Pasadena, California 91101**  
(Address of principal executive offices) (Zip Code)

**Registrant's telephone number, including area code (626) 304-3400**

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Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- ☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
  - ☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
  - ☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
  - ☐ Pre-commencement communications pursuant to Rule 13e-4 (c) under the Exchange Act (17 CFR 240.13e-4(c))
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*This Current Report on Form 8-K contains forward-looking statements concerning future events. When used in this report, the words “intend,” “propose,” “believe,” or “expect” and similar expressions are included to identify forward-looking statements. These forward-looking statements are based on the registrant’s current expectations and assumptions and many factors could cause the registrant’s actual results to differ materially from those indicated by these forward-looking statements. You should review carefully the factors identified under the caption “Risk Factors” in the registrant’s Annual Report on Form 10-K and Quarterly Reports on Form 10-Q filed with the SEC. The registrant does not intend to update or announce revisions to any forward-looking statements to reflect actual events or developments, except as required by applicable law.*

#### **Item 1.01. Entry into a Material Definitive Agreement.**

##### Purchase of Series B Preferred Stock from Nanotope, Inc.

On July 23, 2008, Arrowhead Research Corporation (the “**Company**”) entered into a Series B Preferred Stock Purchase Agreement (the “**Purchase Agreement**”) with Nanotope, Inc. (“**Nanotope**”), pursuant to which the Company purchased 900,901 shares of Nanotope’s Series B preferred stock (the “**Nanotope Series B**”) at a price per share of \$1.11 for an aggregate purchase price of \$1 million. In addition, Nanotope issued 9,548 shares of Nanotope Series B to another investor at a price per share of \$1.11. The Company will invest an additional \$1 million in Nanotope for 900,901 additional shares of Nanotope Series B in a subsequent closing no later than fifty-six (56) days following the initial investment, subject to the bring down of the representations and warranties in the Purchase Agreement. Nanotope may sell up to an additional 1,318,391 shares of Nanotope Series B in the subsequent closings.

The Company’s purchase of Nanotope Series B adds to the Company’s previously acquired 5.78% ownership interest in Nanotope. After giving effect to the Company’s \$2 million investment in Nanotope, the Company will own 465,300 shares of Nanotope common stock and 1,801,802 shares of Nanotope Series B, which collectively represents approximately 23.0% of the outstanding voting stock of Nanotope, on an as-converted basis, and approximately 19.2% of the fully-diluted stock of Nanotope, on an as-converted basis.

##### Terms of Nanotope Capital Stock

*Capitalization.* Nanotope currently has outstanding 4,323,655 shares of common stock, 3,726,242 shares of Series A preferred stock (“**Nanotope Series A**”), 3,129,741 shares of Nanotope Series B (assuming the completion of the Company’s additional \$1 million investment and the sale of all shares of Nanotope Series B authorized for issuance under the Purchase Agreement) and warrants to purchase 36,711 shares of common stock. Contemporaneously with the initial sale of Nanotope Series B, Nanotope reserved 1,904,001 shares of common stock for issuance upon exercise of stock options. No stock options have been issued to date. Any

holder of Nanotope Series A or Nanotope Series B may convert such shares at any time into shares of common stock on a one-for-one basis, subject to adjustment for dividends, stock splits and other capital events. The Series A and Series B holders also have the right to put shares to Nanotope for redemption at any time after July 23, 2015, with redemption of the Nanotope Series A and Nanotope Series B made on a pro rata basis at the original purchase price per share plus all accrued but unpaid dividends. Shares put for redemption will be redeemed over three years in equal installments.

*Voting.* Each share of common stock, Nanotope Series A and Nanotope Series B is entitled to one vote per share. Holders of common stock, Nanotope Series A and Nanotope Series B will vote together as a single class on all matters submitted to a vote of stockholders, unless otherwise required by law and excluding the election of directors. Nanotope's Board of Directors is comprised of six individuals, with each of five investors currently in Nanotope having the right to designate one director, and the remaining seat reserved for the current Chief Executive Officer of Nanotope. In addition, the Nanotope Series A and Nanotope Series B have certain protective provisions for material transactions and changes to Nanotope's capital structure.

*Dividends.* Nanotope Series B shares accrue dividends as, when and if declared by the Board of Directors, in their sole discretion. Nanotope Series A shares accrued dividends of seven percent (7%) from the date of issuance through July 23, 2008 (the date of issuance of the Nanotope Series B) and accrue further dividends as, when and if declared by the Board of Directors. Holders of Nanotope Series A shares and Nanotope Series B shares are entitled to preferences on payment of cash dividends over holders of shares of Nanotope common stock.

*Liquidation Rights.* Upon a liquidation, dissolution or winding-up of Nanotope, the holders of Nanotope Series A and Nanotope Series B are entitled to share equally in all assets remaining after the payment of any liabilities. Payments will be made to the holders on a pari passu basis, and, before any payment may be made to the holders of common stock by reason of their stock ownership, the Nanotope Series A and the Nanotope Series B holders will be paid 1.5 times the original issue price of the applicable series (\$0.94 per share for Nanotope Series A and \$1.11 per share for Nanotope Series B), plus all accrued and unpaid dividends.

#### Related Party Interests

Nanotope was co-founded by the Company's President and Chief Executive Officer, Dr. Christopher Anzalone, through the Benet Group, a private investment entity solely owned and managed by Dr. Anzalone. Through the Benet Group Dr. Anzalone owns 1,395,900 shares of Nanotope common stock, or approximately 14.2% (after giving effect to the sale of Nanotope Series B Preferred Stock) of Nanotope's outstanding voting securities. Dr. Anzalone does not hold options, warrants or any other rights to acquire securities of Nanotope directly or through the Benet Group. The Benet Group has the right to appoint a representative to the board of directors of Nanotope. Dr. Anzalone currently serves on the Nanotope board in a seat reserved for Nanotope's CEO and another individual holds the seat designated by the Benet Group. Dr. Anzalone has served as President and Chief Executive Officer of Nanotope since its formation and continues to serve in these capacities. Dr. Anzalone has not received any compensation for his work on behalf of Nanotope since joining the Company on December 1, 2007. Dr. Anzalone has also waived his right to any unpaid compensation accrued for work done on behalf of Nanotope before he joined the Company.

Dr. Anzalone did not participate on behalf of the Company in the negotiations of the terms of the Nanotope Series B issued to the Company and did not negotiate on behalf of Nanotope after becoming the Chief Executive Officer and President of the Company. Dr. Anzalone did respond to questions asked of him by the Company's board of directors and management regarding Nanotope's business plan, operations and the terms of the Series B Stock Purchase Agreement and ancillary agreements.

The foregoing is intended only as a summary of the terms of the Company's purchase of Nanotope Series B and related transactions. Please refer to the Series B Preferred Stock Purchase Agreement and the Second Amended and Restated Investors Rights Agreement filed as Exhibit 10.1 and 10.2 hereto, for the complete terms of each agreement.

#### **Item 8.01. Other Events.**

##### Intended Acquisition of Nanoconduction, Inc. by Unidym, Inc.

As part of the ongoing strategy of the Company's majority-owned subsidiary, Unidym, Inc. ("**Unidym**") to develop and commercialize carbon nanotube-based products for a variety of applications, Unidym is in discussions to acquire Nanoconduction, Inc., a company originally formed to develop carbon nanotube-based thermal management solutions for the microprocessor industry ("**Nanoconduction**"). The acquisition of Nanoconduction is expected to be consummated through a merger of a wholly-owned subsidiary of Unidym, formed solely for the purpose of the acquisition, with and into Nanoconduction. The parties expect to enter into definitive agreements and to complete the merger in this fiscal quarter, subject to completion of due diligence review by Unidym and the Company.

In connection with the transaction, the Company expects that the merger will provide Unidym with access to Nanoconduction's patent portfolio, which will supplement Unidym's existing patent portfolio and is expected to provide Unidym with additional opportunities to out-license and leverage its technology. In addition, through the merger, Unidym will gain access to facilities and equipment that will be used in Unidym's ongoing research and development activities.

The Company intends to make a non-cash investment in Unidym by issuing Unidym unregistered shares of the Company's common stock having an aggregate market value of \$250,000, in exchange for 138,889 shares of Series C Preferred Stock in Unidym. The Company's investment in Unidym will be used to fund, in part, acquisition of Nanoconduction.

In the merger, Unidym expects to issue the Company's unregistered shares of common stock to Nanoconduction's stockholders and to assume and discharge Nanoconduction's liabilities, including, among others, approximately \$288,000 in bridge loan funding owed by Nanoconduction to existing holders of its Series B preferred stock and approximately \$1,667,000 in capital equipment loans owed by Nanoconduction to its lenders. In the merger, Unidym will guaranty these loan obligations. Unidym also intends to enter into a new five-year lease for the facilities currently occupied by Nanoconduction in Sunnyvale, California.

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### Risks Related to Acquisition and Intellectual Property

There can be no assurance that the merger will be completed on the foregoing terms, or at all.

In addition, Unidym's ability to leverage the technology acquired from Nanoconduction, and the ability of the Company or any of its subsidiaries to develop and commercialize products based on their respective patent portfolios, will depend, in part, on their ability to enforce those patents and operate without infringing the proprietary rights of third parties. There can be no assurance that any patents that may issue from patent applications owned or licensed by the Company or any of its subsidiaries will provide sufficient protection to conduct their business as presently conducted or as proposed to be conducted, or that the Company or its subsidiaries will remain free from infringement claims by third parties.

Additionally, because the nanotechnology intellectual property landscape is rapidly evolving and interdisciplinary, it is difficult to conclusively assess the Company's freedom to operate without infringing on third party rights and no formal freedom to operate assessment has been undertaken to date by the Company. However, the Company is currently aware of certain patent rights held by third parties that, if found to be valid and enforceable, could be alleged to render one or more of the Company's business lines infringing. If a claim should be brought and is successful, the Company may be required to pay damages, be forced to abandon any affected business lines and/or seek a license from the patent holder. These could negatively affect our results of operations and prospects. There can also be no assurance that patents owned or licensed by the Company or its subsidiaries will not be challenged by others.

### **Item 9.01. Financial Statements and Exhibits.**

(d) Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
10.1	Series B Preferred Stock Purchase Agreement, dated July 23, 2008.
10.2	Second Amended and Restated Investors Rights Agreement, dated July 23, 2008.

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## SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: July 25, 2008

ARROWHEAD RESEARCH CORPORATION

By: /s/ Paul McDonnel

Paul McDonnel,  
Chief Financial Officer

**SERIES B PREFERRED STOCK PURCHASE AGREEMENT**

## SERIES B PREFERRED STOCK PURCHASE AGREEMENT

THIS SERIES B PREFERRED STOCK PURCHASE AGREEMENT is made as of the 23rd day of July, 2008 by and among Nanotope, Inc., a Delaware corporation (the “**Company**”), Arrowhead Research Corporation, a Delaware corporation, and the investors listed on Exhibit A attached to this Agreement (each an “**Initial Purchaser**”) and the investors listed on Exhibit A attached to this Agreement (each a “**Subsequent Purchasers**” and together with the Initial Purchasers, the “**Purchasers**”).

The parties hereby agree as follows:

### 1. Purchase and Sale of Preferred Stock.

#### 1.1 Sale and Issuance of Series B Preferred Stock.

(a) The Company shall adopt and file with the Secretary of State of the State of Delaware on or before the Initial Closing (as defined below) the Third Amended and Restated Certificate of Incorporation in the form of Exhibit B attached to this Agreement (the “**Restated Certificate**”).

(b) Subject to the terms and conditions of this Agreement, the Initial Purchaser agrees to purchase at the each of the Initial Closing and Subsequent Closing (as defined below) and the Company agrees to sell and issue to the Initial Purchaser at the Initial Closing and Subsequent Closing that number of shares of Series B Preferred Stock, \$0.001 par value per share (the “**Series B Preferred Stock**”), set forth opposite such Purchaser’s name on Exhibit A, at a purchase price of \$1.11 per share. The shares of Series B Preferred Stock issued to the Purchasers pursuant to this Agreement (including any shares issued at the Initial Closing and the Subsequent Closing) shall be referred to in this Agreement as the “**Shares**.”

#### 1.2 Closing; Delivery.

(a) The initial purchase and sale of the Shares shall take place remotely via the exchange of documents and signatures, at 10:00 a.m., on July 23, 2008, or at such other time and place as the Company and the Initial Purchaser mutually agree upon, orally or in writing (which time and place are designated as the “**Initial Closing**”). The term “**Closing**” shall apply to the Initial Closing and the Subsequent Closing unless otherwise specified.

(b) At each Closing, the Company shall deliver to each Purchaser a certificate representing the Shares being purchased by such Purchaser at such Closing against payment of the purchase price therefor by check payable to the Company or by wire transfer to a bank account designated by the Company, or by any combination of such methods.

1.3 Subsequent Closing; Sale of Additional Shares of Preferred Stock. After the Initial Closing, the Company shall sell to the Initial Purchaser identified on Exhibit A and such Initial Purchaser shall buy, on the same terms and conditions as those contained in this Agreement, 900,901 additional shares (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or similar recapitalization affecting such shares) of Series B Preferred Stock, and the Company may sell to Koninklijke DSM N.V. (or an affiliate thereof) (“**DSM**”) or one or more other purchasers (together with DSM, the “**Additional Purchasers**”) satisfactory to the



Company and the Initial Purchaser and the Additional Purchasers may buy, on the same terms and conditions as those contained in this Agreement, up to 1,318,391 additional shares (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or similar recapitalization affecting such shares) of Series B Preferred Stock (the “**Additional Shares**”), provided that (i) such subsequent sale shall be consummated (which time and place are designated the “**Subsequent Closing**”) within 56 days following the Initial Closing and (ii) each Additional Purchaser shall become a party to the Transaction Agreements (as defined below) by executing and delivering a counterpart signature page to each of the Transaction Agreements. Exhibit A to this Agreement shall be updated to reflect the number of Additional Shares purchased at each such Closing and the parties purchasing such Additional Shares, as appropriate.

1.4 Use of Proceeds. In accordance with the directions of the Company’s Board of Directors, as it shall be constituted in accordance with the Voting Agreement, the Company will use the proceeds from the sale of the Shares for the retention of a Chief Executive Officer and for research and working capital purposes.

1.5 Defined Terms Used in this Agreement. In addition to the terms defined above, the following terms used in this Agreement shall be construed to have the meanings set forth or referenced below.

“**Affiliate**” means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including, without limitation, any general partner, managing member, officer or director of such Person or any venture capital fund now or hereafter existing that is controlled by one or more general partners or managing members of, or shares the same management company with, such Person.

“**Code**” means the Internal Revenue Code of 1986, as amended.

“**Company Intellectual Property**” means all patents, patent applications, trademarks, trademark applications, service marks, tradenames, copyrights, trade secrets, licenses, domain names, mask works, information and proprietary rights and processes as are necessary to the conduct of the Company’s business as now conducted and as presently proposed to be conducted.

“**Investors’ Rights Agreement**” means the Second Amended and Restated Investors’ Rights Agreement among the Company and the Purchasers and certain other stockholders of the Company dated as of the date of the Initial Closing, in the form of Exhibit D attached to this Agreement.

**“Key Employee”** means any employee who either alone or in concert with others develops, invents, programs or designs any Company Intellectual Property (as defined in Section 2.8).

**“Knowledge,”** including the phrase **“to the Company’s knowledge,”** shall mean the actual knowledge of the following officers: Christopher Anzalone and Dr. Samuel Stupp.

**“Material Adverse Effect”** means a material adverse effect on the business, assets (including intangible assets), liabilities, financial condition, property or results of operations of the Company.

**“Person”** means any individual, corporation, partnership, trust, limited liability company, association or other entity.

**“Purchaser”** means each of the Purchasers who is initially a party to this Agreement and any Additional Purchaser who becomes a party to this Agreement at a subsequent Closing under Section 1.3.

**“Right of First Refusal and Co-Sale Agreement”** means Second Amended and Restated Right of First Refusal and Co-Sale Agreement among the Company, the Purchasers, and certain other stockholders of the Company, dated as of the date of the Initial Closing, in the form of Exhibit E attached to this Agreement.

**“Securities Act”** means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

**“Shares”** means the shares of Series B Preferred Stock issued at the Initial Closing and any Additional Shares issued at a subsequent Closing under Section 1.3.

**“Transaction Agreements”** means this Agreement, the Investors’ Rights Agreement, the Right of First Refusal and Co-Sale Agreement and the Voting Agreement.

**“Voting Agreement”** means the Second Amended and Restated Voting Rights Agreement among the Company, the Purchasers and certain other stockholders of the Company, dated as of the date of the Initial Closing, in the form of Exhibit F attached to this Agreement.

2. **Representations and Warranties of the Company.** The Company hereby represents and warrants to each Purchaser that, except as set forth on the Disclosure Schedule attached as Exhibit C to this Agreement, which exceptions shall be deemed to be part of the representations and warranties made hereunder, the following representations are true and complete as of the date of the Initial Closing, except as otherwise indicated. The Disclosure Schedule shall be arranged in sections corresponding to the numbered and lettered sections and subsections contained in this Section 2, and the disclosures in any section or subsection of the Disclosure Schedule shall qualify other sections and subsections in this Section 2 only to the extent it is readily apparent from a reading of the disclosure that such disclosure is applicable to such other sections and subsections. For purposes of these representations and warranties (other than those in Sections 2.2, 2.3, 2.4, 2.5 and 2.6), the term “the Company” shall include any subsidiaries of the Company, unless otherwise noted herein.

**2.1 Organization, Good Standing, Corporate Power and Qualification.** The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has all requisite corporate power and authority to carry on its business as presently conducted and as proposed to be conducted. The Company is duly qualified to transact business and is in good standing in each jurisdiction in which the failure to so qualify would have a Material Adverse Effect.

**2.2 Capitalization.** The authorized capital of the Company consists, immediately prior to the Initial Closing, of:

(a) 13,800,000 shares of common stock, \$0.001 par value per share (the “Common Stock”), 4,323,655 shares of which are issued and outstanding immediately prior to the Initial Closing. All of the outstanding shares of Common Stock have been duly authorized, are fully paid and nonassessable and were issued in compliance with all applicable federal and state securities laws. The Company holds no treasury stock and no shares of Series A Preferred Stock or Series B Preferred Stock in its treasury.

(b) 7,500,000 shares of Preferred Stock, of which 4,000,000 shares have been designated Series A Preferred Stock, 3,726,242 of which are issued and outstanding immediately prior to the Initial Closing and 3,500,000 shares have been designated Series B Preferred Stock, none of which are issued and outstanding immediately prior to the Initial Closing. The rights, privileges and preferences of the Preferred Stock are as stated in the Restated Certificate and as provided by the general corporation law of the jurisdiction of the Company’s incorporation.

(c) The Company has allocated 1,904,001 shares of Common Stock, subject to approval by the Board of Directors and the Shareholders of the Corporation, for issuance to officers, directors, employees and consultants of the Company pursuant to its stock plan then in effect (the “**Stock Plan**”). Of such reserved shares of Common Stock, no shares have been issued pursuant to restricted stock purchase agreements, no options to purchase shares have been granted and are currently outstanding, and 1,904,001 shares of Common Stock remain available for issuance to officers, directors, employees and consultants pursuant to the Stock Plan. The Company has furnished to the Purchasers complete and accurate copies of the Stock Plan and forms of agreements used thereunder.

(d) Section 2.2(d) of the Disclosure Schedule sets forth the capitalization of the Company immediately following the Initial Closing including the number of shares of the following: (i) issued and outstanding Common Stock, including, with respect to restricted Common Stock, vesting schedule and repurchase price; (ii) issued stock options, including vesting schedule and exercise price; (iii) stock options not yet issued but reserved for issuance; (iv) each series of Preferred Stock; and (v) warrants or stock purchase rights. Except for (A) the conversion privileges of the Shares to be issued under this Agreement, and (B) the securities and rights described in Section 2.2(c) of this Agreement and Section 2.2(d) of the Disclosure Schedule, there are no outstanding options, warrants, rights (including conversion or preemptive rights and rights of first refusal or similar rights) or agreements, orally or in writing, to purchase or acquire from the Company any shares of Common Stock, Series A Preferred Stock, Series B Preferred Stock, or any securities convertible into or exchangeable for shares of Common Stock, Series A Preferred Stock or Series B Preferred Stock. All outstanding shares of the Company’s Common Stock and all shares of the Company’s Common Stock underlying

outstanding options are subject to (i) a right of first refusal in favor of the Company upon any proposed transfer (other than transfers for estate planning purposes); and (ii) a lock-up or market standoff agreement of not less than 180 days following the Company's initial public offering pursuant to a registration statement filed with the Securities and Exchange Commission under the Securities Act.

(e) None of the Company's stock purchase agreements or stock option documents contains a provision for acceleration of vesting (or lapse of a repurchase right) or other changes in the vesting provisions or other terms of such agreement or understanding upon the occurrence of any event or combination of events. The Company has never adjusted or amended the exercise price of any stock options previously awarded, whether through amendment, cancellation, replacement grant, repricing, or any other means. Except as set forth in the Restated Certificate, the Company has no obligation (contingent or otherwise) to purchase or redeem any of its capital stock.

2.3 Subsidiaries. The Company does not currently own or control, directly or indirectly, any interest in any other corporation, partnership, trust, joint venture, limited liability company, association, or other business entity. The Company is not a participant in any joint venture, partnership or similar arrangement.

2.4 Authorization. All corporate action required to be taken by the Company's Board of Directors and stockholders in order to authorize the Company to enter into the Transaction Agreements, and to issue the Shares at the Closing and the Common Stock issuable upon conversion of the Shares, has been taken or will be taken prior to the Closing. All action on the part of the officers of the Company necessary for the execution and delivery of the Transaction Agreements, the performance of all obligations of the Company under the Transaction Agreements to be performed as of the Closing, and the issuance and delivery of the Shares has been taken or will be taken prior to the Closing. The Transaction Agreements, when executed and delivered by the Company, shall constitute valid and legally binding obligations of the Company, enforceable against the Company in accordance with their respective terms except (i) as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, or other laws of general application relating to or affecting the enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies, or (iii) to the extent the indemnification provisions contained in the Investors' Rights Agreement may be limited by applicable federal or state securities laws.

2.5 Valid Issuance of Shares. The Shares, when issued, sold and delivered in accordance with the terms and for the consideration set forth in this Agreement, will be validly issued, fully paid and nonassessable and free of restrictions on transfer other than restrictions on transfer under the Transaction Agreements, applicable state and federal securities laws and liens or encumbrances created by or imposed by a Purchaser. Assuming the accuracy of the representations of the Purchasers in Section 3 of this Agreement and subject to the filings described in Section 2.6(ii) below, the Shares will be issued in compliance with all applicable federal and state securities laws. The Common Stock issuable upon conversion of the Shares has been duly reserved for issuance, and upon issuance in accordance with the terms of the Restated Certificate, will be validly issued, fully paid and nonassessable and free of restrictions on transfer

other than restrictions on transfer under the Transaction Agreements, applicable federal and state securities laws and liens or encumbrances created by or imposed by a Purchaser. Based in part upon the representations of the Purchasers in Section 3 of this Agreement, and subject to Section 2.6 below, the Common Stock issuable upon conversion of the Shares will be issued in compliance with all applicable federal and state securities laws.

**2.6 Governmental Consents and Filings.** Assuming the accuracy of the representations made by the Purchasers in Section 3 of this Agreement, no consent, approval, order or authorization of, or registration, qualification, designation, declaration or filing with, any federal, state or local governmental authority is required on the part of the Company in connection with the consummation of the transactions contemplated by this Agreement, except for (i) the filing of the Restated Certificate, which will have been filed as of the Initial Closing, and (ii) filings pursuant to Regulation D of the Securities Act, and applicable state securities laws, which have been made or will be made in a timely manner.

**2.7 Litigation.** There is no claim, action, suit, proceeding, arbitration, complaint, charge or, to the Company's knowledge, investigation pending or to the Company's knowledge, currently threatened in writing (i) against the Company or any officer, director or Key Employee of the Company arising out of their employment or board relationship with the Company; (ii) to the Company's knowledge, that questions the validity of the Transaction Agreements or the right of the Company to enter into them, or to consummate the transactions contemplated by the Transaction Agreements; or (iii) to the Company's knowledge, that would reasonably be expected to have, either individually or in the aggregate, a Material Adverse Effect. Neither the Company nor, to the Company's knowledge, any of its officers, directors or Key Employees is a party or is named as subject to the provisions of any order, writ, injunction, judgment or decree of any court or government agency or instrumentality (in the case of officers, directors or Key Employees, such as would affect the Company). There is no action, suit, proceeding or investigation by the Company pending or which the Company intends to initiate. The foregoing includes, without limitation, actions, suits, proceedings or investigations pending or threatened in writing (or any basis therefor known to the Company) involving the prior employment of any of the Company's employees, their services provided in connection with the Company's business, or any information or techniques allegedly proprietary to any of their former employers, or their obligations under any agreements with prior employers.

**2.8 Intellectual Property.** Section 2.8 of the Disclosure Schedule lists all Company Intellectual Property. controlled by the Company as of the effective date. The Company owns or possesses or believes it can acquire on commercially reasonable terms sufficient legal rights to all Company Intellectual Property without any known conflict with, or infringement of, the rights of others. To the Company's knowledge, no product or service marketed or sold (or proposed to be marketed or sold) by the Company violates or will violate any license or infringes or will infringe any intellectual property rights of any other party. The Company represents that it has no actual or constructive knowledge of any third parties that are asserting or could credibly assert ownership or inventorship interests or rights in the Company Intellectual Property that is controlled by the Company as of the Effective Date. The Company represents that it has no actual or constructive knowledge of any grounds on which a charge of inequitable conduct could credibly be directed against any inventor, Company employee or patent practitioner associated with Company Intellectual Property that is owned by the Company

or against any Company employee associated with Company Intellectual Property that is controlled as of the Effective Date. Other than with respect to commercially available software products under standard end-user object code license agreements and the license agreement with Northwestern University, there are no outstanding options, licenses, agreements, claims, liens, security interests, encumbrances or shared ownership interests of any kind relating to the Company Intellectual Property, nor is the Company bound by or a party to any options, licenses, security interests or agreements of any kind with respect to the patents, trademarks, service marks, trade names, copyrights, trade secrets, licenses, information, proprietary rights and processes of any other Person. The Company has not received nor can it reasonably expect to receive any communications alleging that the Company has violated or, by conducting its business, would violate any of the patents, trademarks, service marks, trade names, copyrights, trade secrets, mask works or other proprietary rights or processes of any other Person. The Company has obtained and possesses valid licenses to use all of the software programs present on the computers and other software-enabled electronic devices that it owns or leases or that it has otherwise provided to its employees for their use in connection with the Company's business. To the Company's knowledge, it will not be necessary to use any inventions of any of its employees or consultants (or Persons it currently intends to hire) made prior to their employment by the Company. Each employee and consultant has assigned to the Company all intellectual property rights he or she owns that are related to the Company's business as now conducted and as presently proposed to be conducted. The Company has not embedded any open source, copy left or community source code in any of its products generally available or in development, including but not limited to any libraries or code licensed under any General Public License, Lesser General Public License or similar license arrangement.

**2.9 Compliance with Other Instruments.** The Company is not in violation or default (i) of any provisions of its Restated Certificate or Bylaws, (ii) of any instrument, judgment, order, writ or decree, (iii) under any note, indenture or mortgage, or (iv) under any lease, agreement, contract or purchase order to which it is a party or by which it is bound that is required to be listed on the Disclosure Schedule, or, to its knowledge, of any provision of federal or state statute, rule or regulation applicable to the Company, the violation of which would have a Material Adverse Effect. The execution, delivery and performance of the Transaction Agreements and the consummation of the transactions contemplated by the Transaction Agreements will not result in any such violation or be in conflict with or constitute, with or without the passage of time and giving of notice, either (i) a default under any such provision, instrument, judgment, order, writ, decree, contract or agreement or (ii) an event which results in the creation of any lien, charge or encumbrance upon any assets of the Company or the suspension, revocation, forfeiture, or nonrenewal of any material permit or license applicable to the Company.

**2.10 Agreements; Actions.**

(a) Except for the Transaction Agreements and except as set forth in Section 2.10 of the Disclosure Schedule, there are no agreements, understandings, instruments, contracts or proposed transactions to which the Company is a party or by which it is bound that involve (i) obligations (contingent or otherwise) of, or payments to, the Company in excess of \$25,000, (ii) the license of any patent, copyright, trademark, trade secret or other proprietary right to or from the Company, (iii) the grant of rights to manufacture, produce, assemble, license, market, or sell its products to any other Person that limit the Company's exclusive right to develop, manufacture, assemble, distribute, market or sell its products, or (iv) indemnification by the Company with respect to infringements of proprietary rights.

(b) The Company has not (i) declared or paid any dividends, or authorized or made any distribution upon or with respect to any class or series of its capital stock, (ii) incurred any indebtedness for money borrowed or incurred any other liabilities individually in excess of \$25,000 or in excess of \$100,000 in the aggregate, (iii) made any loans or advances to any Person, other than ordinary advances for travel expenses, or (iv) sold, exchanged or otherwise disposed of any of its assets or rights, other than the sale of its inventory in the ordinary course of business. For the purposes of subsections (b) and (c) of this Section 2.10, all indebtedness, liabilities, agreements, understandings, instruments, contracts and proposed transactions involving the same Person (including Persons the Company has reason to believe are affiliated with each other) shall be aggregated for the purpose of meeting the individual minimum dollar amounts of such subsection.

(c) The Company is not a guarantor or indemnitor of any indebtedness of any other Person.

#### 2.11 Certain Transactions.

(a) Other than (i) the agreements listed in Section 2.10(a) of the Disclosure Schedule, (ii) standard employee benefits generally made available to all employees, (iii) standard director and officer indemnification agreements approved by the Board of Directors, and (iv) the purchase of shares of the Company's capital stock and the issuance of options to purchase shares of the Company's Common Stock, in each instance, approved by the Board of Directors, there are no agreements, understandings or proposed transactions between the Company and any of its officers, directors, consultants or Key Employees, or any Affiliate thereof.

(b) The Company is not indebted, directly or indirectly, to any of its officers or employees or to their respective spouses or children or to any Affiliate of any of the foregoing, other than in connection with expenses or advances of expenses incurred in the ordinary course of business or employee relocation expenses and for other customary employee benefits made generally available to all employees. None of the Company's officers or employees, or any members of their immediate families, or any Affiliate of the foregoing are, directly or indirectly, indebted to the Company or, to the Company's knowledge, have any (i) material commercial, industrial, banking, consulting, legal, accounting, charitable or familial relationship with any of the Company's customers, suppliers, service providers, joint venture partners, licensees and competitors, (ii) direct or indirect ownership interest in any firm or corporation with which the Company is affiliated or with which the Company has a business relationship, or any firm or corporation which competes with the Company except that officers or employees or stockholders of the Company may own stock in (but not exceeding two percent (2%) of the outstanding capital stock of) publicly traded companies that may compete with the Company or (iii) financial interest in any material contract with the Company except as set forth in Section 2.11(b) of the Disclosure Schedule.

2.12 Rights of Registration and Voting Rights. Except as provided in the Investors' Rights Agreement, the Company is not under any obligation to register under the Securities Act any of its currently outstanding securities or any securities issuable upon exercise or conversion of its currently outstanding securities. To the Company's knowledge, except as contemplated in the Voting Agreement, no stockholder of the Company has entered into any agreements with respect to the voting of capital shares of the Company.

2.13 Absence of Liens. The property and assets that the Company owns are free and clear of all mortgages, deeds of trust, liens, loans and encumbrances, except for statutory liens for the payment of current taxes that are not yet delinquent and encumbrances and liens that arise in the ordinary course of business and do not materially impair the Company's ownership or use of such property or assets. With respect to the property and assets it leases, the Company is in compliance with such leases and, to its knowledge, holds a valid leasehold interest free of any liens, claims or encumbrances other than those of the lessors of such property or assets.

2.14 Financial Statements. The Company has delivered to each Purchaser its audited financial statements as of December 31, 2007 and for the fiscal year ended December 31, 2007 and its unaudited financial statements for the three-month period ended March 31, 2008 (collectively, the "**Financial Statements**"). The Financial Statements have been prepared in accordance with generally accepted accounting principles applied on a consistent basis throughout the periods indicated, except that the unaudited Financial Statements may not contain all footnotes required by generally accepted accounting principles. The Financial Statements fairly present in all material respects the financial condition and operating results of the Company as of the dates, and for the periods, indicated therein, subject in the case of the unaudited Financial Statements to normal year-end audit adjustments. Except as set forth in the Financial Statements, the Company has no material liabilities or obligations, contingent or otherwise, other than (i) liabilities incurred in the ordinary course of business subsequent to December 31, 2007 (ii) obligations under contracts and commitments incurred in the ordinary course of business and (iii) liabilities and obligations of a type or nature not required under generally accepted accounting principles to be reflected in the Financial Statements, which, in all such cases, individually and in the aggregate would not have a Material Adverse Effect. The Company maintains and will continue to maintain a standard system of accounting established and administered in accordance with generally accepted accounting principles.

2.15 Changes. Except as set forth on Section 2.15 of the Disclosure Schedule, since date of most recent Financial Statements there has not been any change in the assets, liabilities, financial condition or operating results of the Company from that reflected in the Financial Statements, except changes in the ordinary course of business that have not caused, in the aggregate, a Material Adverse Effect;

- (a) any damage, destruction or loss, whether or not covered by insurance, that would have a Material Adverse Effect;
- (b) any waiver or compromise by the Company of a valuable right or of a material debt owed to it;
- (c) any satisfaction or discharge of any lien, claim, or encumbrance or payment of any obligation by the Company, except in the ordinary course of business and the satisfaction or discharge of which would not have a Material Adverse Effect;
- (d) any material change to a material contract or agreement by which the Company or any of its assets is bound or subject;



- (e) any material change in any compensation arrangement or agreement with any employee, officer, director or stockholder;
- (f) any resignation or termination of employment of any officer or Key Employee of the Company;
- (g) any mortgage, pledge, transfer of a security interest in, or lien, created by the Company, with respect to any of its material properties or assets, except liens for taxes not yet due or payable and liens that arise in the ordinary course of business and do not materially impair the Company's ownership or use of such property or assets;
- (h) any loans or guarantees made by the Company to or for the benefit of its employees, officers or directors, or any members of their immediate families, other than travel advances and other advances made in the ordinary course of its business;
- (i) any declaration, setting aside or payment or other distribution in respect of any of the Company's capital stock, or any direct or indirect redemption, purchase, or other acquisition of any of such stock by the Company;
- (j) any sale, assignment or transfer of any Company Intellectual Property that could reasonably be expected to result in a Material Adverse Effect;
- (k) receipt of notice that there has been a loss of, or material order cancellation by, any major customer of the Company;
- (l) to the Company's knowledge, any other event or condition of any character, other than events affecting the economy or the Company's industry generally, that could reasonably be expected to result in a Material Adverse Effect; or
- (m) any arrangement or commitment by the Company to do any of the things described in this Section 2.15.

**2.16 Employee Matters.**

(a) Section 2.16 of the Disclosure Schedule sets forth a detailed description of all compensation, including salary, bonus, severance obligations and deferred compensation paid or payable for each officer, employee, consultant and independent contractor of the Company who received compensation in excess of \$100,000 for the fiscal year ended December 31, 2007 or is anticipated to receive compensation in excess of \$100,000 for the fiscal year ending December 31, 2008.

(b) To the Company's knowledge, none of its employees is obligated under any contract (including licenses, covenants or commitments of any nature) or other agreement, or subject to any judgment, decree or order of any court or administrative agency, that would materially interfere with such employee's ability to promote the interest of the Company or that would conflict with the Company's business. Neither the execution or delivery of the Transaction Agreements, nor the carrying on of the Company's business by the employees of the Company, nor the conduct of the Company's business as now conducted and as presently proposed to be conducted, will, to the Company's knowledge, conflict with or result in a breach of the terms, conditions, or provisions of, or constitute a default under, any contract, covenant or instrument under which any such employee is now obligated.

(c) The Company is not delinquent in payments to any of its employees, consultants, or independent contractors for any wages, salaries, commissions, bonuses, or other direct compensation for any service performed for it to the date hereof or amounts required to be reimbursed to such employees, consultants, or independent contractors. The Company has complied in all material respects with all applicable state and federal equal employment opportunity laws and with other laws related to employment, including those related to wages, hours, worker classification, and collective bargaining. The Company has withheld and paid to the appropriate governmental entity or is holding for payment not yet due to such governmental entity all amounts required to be withheld from employees of the Company and is not liable for any arrears of wages, taxes, penalties, or other sums for failure to comply with any of the foregoing.

(d) To the Company's knowledge, no Key Employee intends to terminate employment with the Company or is otherwise likely to become unavailable to continue as a Key Employee, nor does the Company have a present intention to terminate the employment of any of the foregoing. The employment of each employee of the Company is terminable at the will of the Company. Except as set forth in Section 2.16 of the Disclosure Schedule or as required by law, upon termination of the employment of any such employees, no severance or other payments will become due. Except as set forth in Section 2.16 of the Disclosure Schedule, the Company has no policy, practice, plan, or program of paying severance pay or any form of severance compensation in connection with the termination of employment services.

(e) The Company has not made any representations regarding equity incentives to any officer, employees, director or consultant that are inconsistent with the share amounts and terms set forth in the minutes of meetings of the Company's board of directors.

(f) Each former Key Employee whose employment was terminated by the Company has entered into an agreement with the Company providing for the full release of any claims against the Company or any related party arising out of such employment.

(g) Section 2.16 of the Disclosure Schedule sets forth each employee benefit plan maintained, established or sponsored by the Company, or which the Company participates in or contributes to, which is subject to the Employee Retirement Income Security Act of 1974, as amended ("ERISA"). The Company has made all required contributions and has no liability to any such employee benefit plan, other than liability for health plan continuation coverage described in Part 6 of Title I(B) of ERISA, and has complied in all material respects with all applicable laws for any such employee benefit plan.

2.17 Tax Returns and Payments. There are no federal, state, county, local or foreign taxes due and payable by the Company which have not been timely paid. There are no accrued and unpaid federal, state, country, local or foreign taxes of the Company which are due, whether or not assessed or disputed. There have been no examinations or audits of any tax

returns or reports by any applicable federal, state, local or foreign governmental agency. The Company has duly and timely filed all federal, state, county, local and foreign tax returns required to have been filed by it and there are in effect no waivers of applicable statutes of limitations with respect to taxes for any year.

2.18 Insurance. The Company has in full force and effect fire and casualty insurance policies with extended coverage, sufficient in amount (subject to reasonable deductions) to allow it to replace any of its properties that might be damaged or destroyed.

2.19 Confidential Information and Invention Assignment Agreements. Each current and former employee, consultant and officer of the Company has executed an agreement with the Company regarding confidentiality and proprietary information substantially in the form or forms delivered to the counsel for the Purchasers (the “**Confidential Information Agreements**”). The Purchasers acknowledge that Professor Samuel I. Stupp has not and will not be assigning to the Company any works or inventions which are not related to the research and production of “scaffolding.” For the purposes of this Agreement, the term “scaffolding” means a three-dimensional matrix of nanofibers that may be engineered to elicit specific cell responses.

2.20 Permits. The Company has all franchises, permits, licenses and any similar authority necessary for the conduct of its business, the lack of which could reasonably be expected to have a Material Adverse Effect. The Company is not in default in any material respect under any of such franchises, permits, licenses or other similar authority.

2.21 Corporate Documents. The Restated Certificate and Bylaws of the Company are in the form provided to the Purchasers. The copy of the minute books of the Company provided to the Purchasers contains minutes of all meetings of directors and stockholders and all actions by written consent without a meeting by the directors and stockholders since the date of incorporation and accurately reflects in all material respects all actions by the directors (and any committee of directors) and stockholders with respect to all transactions referred to in such minutes.

2.22 Real Property Holding Corporation. The Company is not now and has never been a “United States real property holding corporation” as defined in the Code and any applicable regulations promulgated thereunder. The Company has filed with the Internal Revenue Service all statements, if any, with its United States income tax returns which are required under such regulations.

2.23 Environmental and Safety Laws. Except as could not reasonably be expected to have a Material Adverse Effect to the best of its knowledge (a) the Company is and has been in compliance with all Environmental Laws; (b) there has been no release or to the Company’s knowledge threatened release of any pollutant, contaminant or toxic or hazardous material, substance or waste, or petroleum or any fraction thereof, (each a “**Hazardous Substance**”) on, upon, into or from any site currently or heretofore owned, leased or otherwise used by the Company; (c) there have been no Hazardous Substances generated by the Company that have been disposed of or come to rest at any site that has been included in any published U.S. federal, state or local “superfund” site list or any other similar list of hazardous or toxic waste sites published by any governmental authority in the United States; and (d) there are no underground storage tanks located on, no polychlorinated biphenyls (“**PCBs**”)

or PCB- containing equipment used or stored on, and no hazardous waste as defined by the Resource Conservation and Recovery Act, as amended, stored on, any site owned or operated by the Company, except for the storage of hazardous waste in compliance with Environmental Laws. The Company has made available to the Purchasers true and complete copies of all material environmental records, reports, notifications, certificates of need, permits, pending permit applications, correspondence, engineering studies, and environmental studies or assessments.

For purposes of this Section 2.23, “Environmental Laws” means any law, regulation, or other applicable requirement relating to (a) releases or threatened release of Hazardous Substance; (b) pollution or protection of employee health or safety, public health or the environment; or (c) the manufacture, handling, transport, use, treatment, storage, or disposal of Hazardous Substances.

2.24 Disclosure. The Company has made available to the Purchasers all the information reasonably available to the Company that the Purchasers have requested for deciding whether to acquire the Shares, including certain of the Company’s projections describing its proposed business plan (the “**Business Plan**”). No representation or warranty of the Company contained in this Agreement, as qualified by the Disclosure Schedule, and no certificate furnished or to be furnished to Purchasers at the Closing contains any untrue statement of a material fact or, to the Company’s knowledge, omits to state a material fact necessary in order to make the statements contained herein or therein not misleading in light of the circumstances under which they were made. The Business Plan was prepared in good faith; however, the Company does not warrant that it will achieve any results projected in the Business Plan. It is understood that this representation is qualified by the fact that the Company has not delivered to the Purchasers, and has not been requested to deliver, a private placement or similar memorandum or any written disclosure of the types of information customarily furnished to purchasers of securities.

3. Representations and Warranties of the Purchasers. Each Purchaser hereby represents and warrants to the Company, severally and not jointly, that:

3.1 Authorization. The Purchaser has full power and authority to enter into the Transaction Agreements. The Transaction Agreements to which the Purchaser is a party, when executed and delivered by the Purchaser, will constitute valid and legally binding obligations of the Purchaser, enforceable in accordance with their terms, except (a) as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, and any other laws of general application affecting enforcement of creditors’ rights generally, and as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies, or (b) to the extent the indemnification provisions contained in the Investors’ Rights Agreement may be limited by applicable federal or state securities laws.

3.2 Purchase Entirely for Own Account. This Agreement is made with the Purchaser in reliance upon the Purchaser’s representation to the Company, which by the Purchaser’s execution of this Agreement, the Purchaser hereby confirms, that the Shares to be acquired by the Purchaser will be acquired for investment for the Purchaser’s own account, not as a nominee or agent, and not with a view to the resale or distribution of any part thereof, and that the Purchaser has no present intention of selling, granting any participation in, or otherwise distributing the same. By executing this Agreement, the Purchaser further represents that the

Purchaser does not presently have any contract, undertaking, agreement or arrangement with any Person to sell, transfer or grant participations to such Person or to any third Person, with respect to any of the Shares. The Purchaser has not been formed for the specific purpose of acquiring the Shares.

3.3 Disclosure of Information. The Purchaser has had an opportunity to discuss the Company's business, management, financial affairs and the terms and conditions of the offering of the Shares with the Company's management and has had an opportunity to review the Company's facilities. The foregoing, however, does not limit or modify the representations and warranties of the Company in Section 2 of this Agreement or the right of the Purchasers to rely thereon.

3.4 Restricted Securities. The Purchaser understands that the Shares have not been, and will not be, registered under the Securities Act, by reason of a specific exemption from the registration provisions of the Securities Act which depends upon, among other things, the bona fide nature of the investment intent and the accuracy of the Purchaser's representations as expressed herein. The Purchaser understands that the Shares are "restricted securities" under applicable U.S. federal and state securities laws and that, pursuant to these laws, the Purchaser must hold the Shares indefinitely unless they are registered with the Securities and Exchange Commission and qualified by state authorities, or an exemption from such registration and qualification requirements is available. The Purchaser acknowledges that the Company has no obligation to register or qualify the Shares, or the Common Stock into which it may be converted, for resale except as set forth in the Investors' Rights Agreement. The Purchaser further acknowledges that if an exemption from registration or qualification is available, it may be conditioned on various requirements including, but not limited to, the time and manner of sale, the holding period for the Shares, and on requirements relating to the Company which are outside of the Purchaser's control, and which the Company is under no obligation and may not be able to satisfy.

3.5 No Public Market. The Purchaser understands that no public market now exists for the Shares, and that the Company has made no assurances that a public market will ever exist for the Shares.

3.6 Legends.

(a) The Purchaser understands that the Shares and any securities issued in respect of or exchange for the Shares, may bear one or all of the following legends:

"THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH TRANSFER MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN A FORM SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE SECURITIES ACT OF 1933."

(b) Any legend set forth in, or required by, the other Transaction Agreements.

(c) Any legend required by the securities laws of any state to the extent such laws are applicable to the Shares represented by the certificate so legended.

3.7 Accredited Investor. The Purchaser is an accredited investor as defined in Rule 501(a) of Regulation D promulgated under the Securities Act.

3.8 Foreign Investors. If the Purchaser is not a United States person (as defined by Section 7701(a)(30) of the Code), the Purchaser hereby represents that it has satisfied itself as to the full observance of the laws of its jurisdiction in connection with any invitation to subscribe for the Shares or any use of this Agreement, including (i) the legal requirements within its jurisdiction for the purchase of the Shares, (ii) any foreign exchange restrictions applicable to such purchase, (iii) any governmental or other consents that may need to be obtained, and (iv) the income tax and other tax consequences, if any, that may be relevant to the purchase, holding, redemption, sale, or transfer of the Shares. The Purchaser's subscription and payment for and continued beneficial ownership of the Shares will not violate any applicable securities or other laws of the Purchaser's jurisdiction.

3.9 No General Solicitation. Neither the Purchaser, nor any of its officers, directors, employees, agents, stockholders or partners has either directly or indirectly, including through a broker or finder (a) engaged in any general solicitation, or (b) published any advertisement in connection with the offer and sale of the Shares.

3.10 Exculpation Among Purchasers. Each Purchaser acknowledges that it is not relying upon any Person, other than the Company and its officers and directors, in making its investment or decision to invest in the Company. Each Purchaser agrees that neither any Purchaser nor the respective controlling Persons, officers, directors, partners, agents, or employees of any Purchaser shall be liable to any other Purchaser for any action heretofore taken or omitted to be taken by any of them in connection with the purchase of the Shares.

3.11 Residence. If the Purchaser is an individual, then the Purchaser resides in the country and state or province identified in the address of the Purchaser set forth on Exhibit A; if the Purchaser is a partnership, corporation, limited liability company or other entity, then the office or offices of the Purchaser in which its principal place of business is identified in the address or addresses of the Purchaser set forth on Exhibit A.

4. Conditions to the Purchasers' Obligations at Closing. The obligations of each Purchaser to purchase Shares at the Initial Closing or any subsequent Closing are subject to the fulfillment, on or before such Closing, of each of the following conditions, unless otherwise waived:

4.1 Representations and Warranties. The representations and warranties of the Company contained in Section 2 shall be true and correct in all respects as of such Closing.

4.2 Performance. The Company shall have performed and complied with all covenants, agreements, obligations and conditions contained in this Agreement that are required to be performed or complied with by the Company on or before such Closing.

4.3 Compliance Certificate. The President of the Company shall deliver to the Purchasers at such Closing a certificate certifying that the conditions specified in Sections 4.1 and 4.2 have been fulfilled.

4.4 Qualifications. All authorizations, approvals or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful issuance and sale of the Shares pursuant to this Agreement shall be obtained and effective as of such Closing.

4.5 Board of Directors. As of the Initial Closing, the Board shall consist of the directors set forth in the Voting Agreement attached hereto as Exhibit E.

4.6 Investors' Rights Agreement. The Company and each Purchaser (other than the Purchaser relying upon this condition to excuse such Purchaser's performance hereunder) and the other stockholders of the Company named as parties thereto shall have executed and delivered the Investors' Rights Agreement.

4.7 Right of First Refusal and Co-Sale Agreement. The Company, each Purchaser (other than the Purchaser relying upon this condition to excuse such Purchaser's performance hereunder), and the other stockholders of the Company named as parties thereto shall have executed and delivered the Right of First Refusal and Co-Sale Agreement.

4.8 Voting Agreement. The Company, each Purchaser (other than the Purchaser relying upon this condition to excuse such Purchaser's performance hereunder), and the other stockholders of the Company named as parties thereto shall have executed and delivered the Voting Agreement.

4.9 Restated Certificate. The Company shall have filed the Restated Certificate with the Secretary of State of Delaware on or prior to the Closing, which shall continue to be in full force and effect as of the Closing.

4.10 Secretary's Certificate. The Secretary of the Company shall have delivered to the Purchasers at the Closing a certificate certifying (i) the Bylaws of the Company, (ii) resolutions of the Board of Directors of the Company approving the Transaction Agreements and the transactions contemplated under the Transaction Agreements, and (iii) resolutions of the stockholders of the Company approving the Restated Certificate.

4.11 Proceedings and Documents. All corporate and other proceedings in connection with the transactions contemplated at the Closing and all documents incident thereto shall be reasonably satisfactory in form and substance to each Purchaser, and each Purchaser (or its counsel) shall have received all such counterpart original and certified or other copies of such documents as reasonably requested. Such documents may include good standing certificates.

4.12 Minimum Number of Shares at Initial Closing. A minimum of 900,901 Shares must be sold at the Initial Closing.

5. Conditions of the Company's Obligations at Closing. The obligations of the Company to sell Shares to the Purchasers at the Initial Closing or any subsequent Closing are subject to the fulfillment, on or before the Closing, of each of the following conditions, unless otherwise waived:

5.1 Representations and Warranties. The representations and warranties of each Purchaser contained in Section 3 shall be true and correct in all respects as of such Closing.

5.2 Performance. The Purchasers shall have performed and complied with all covenants, agreements, obligations and conditions contained in this Agreement that are required to be performed or complied with by them on or before such Closing.

5.3 Qualifications. All authorizations, approvals or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful issuance and sale of the Share pursuant to this Agreement shall be obtained and effective as of the Closing.

5.4 Investors' Rights Agreement. Each Purchaser shall have executed and delivered the Investors' Rights Agreement.

5.5 Right of First Refusal and Co-Sale Agreement. Each Purchaser and the other stockholders of the Company named as parties thereto shall have executed and delivered the Right of First Refusal and Co-Sale Agreement.

5.6 Voting Agreement. Each Purchaser and the other stockholders of the Company named as parties thereto shall have executed and delivered the Voting Agreement.

5.7 Minimum Number of Shares at Initial Closing. A minimum of 900,901 Shares must be sold at the Initial Closing.

6. Miscellaneous.

6.1 Survival of Warranties. Unless otherwise set forth in this Agreement, the representations and warranties of the Company and the Purchasers contained in or made pursuant to this Agreement shall survive the execution and delivery of this Agreement and the Closing and shall in no way be affected by any investigation or knowledge of the subject matter thereof made by or on behalf of the Purchasers or the Company.

6.2 Successors and Assigns. The terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations, or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement.



6.3 Governing Law. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of law.

6.4 Counterparts; Facsimile. This Agreement may be executed and delivered by facsimile signature and in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

6.5 Titles and Subtitles. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

6.6 Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of actual receipt or: (a) personal delivery to the party to be notified, (b) when sent, if sent by electronic mail or facsimile during normal business hours of the recipient, and if not sent during normal business hours, then on the recipient's next business day, or (c) three(3) business days after deposit with an internationally recognized overnight courier, freight prepaid, specifying next business day delivery, if available, with written verification of receipt. All communications shall be sent to the respective parties at their address as set forth on the signature page or Exhibit A, or to such e-mail address, facsimile number or address as subsequently modified by written notice given in accordance with this Section 6.6. All notices to the Company pursuant to this Section 6.6 shall be sent to Nanotope, Inc., 8025 Lamon Avenue, Suite 450, Skokie, IL 60077. If notice is given to the Company, a copy shall also be sent to Jon Wasserman at Neal, Gerber & Eisenberg LLP, Two North LaSalle Street, Suite 2200, Chicago, IL 60602, Facsimile Number (312) 269-1747.

6.7 No Finder's Fees. Each party represents that it neither is nor will be obligated for any finder's fee or commission in connection with this transaction. Each Purchaser agrees to indemnify and to hold harmless the Company from any liability for any commission or compensation in the nature of a finder's or broker's fee arising out of this transaction (and the costs and expenses of defending against such liability or asserted liability) for which each Purchaser or any of its officers, employees, or representatives is responsible. The Company agrees to indemnify and hold harmless each Purchaser from any liability for any commission or compensation in the nature of a finder's or broker's fee arising out of this transaction (and the costs and expenses of defending against such liability or asserted liability) for which the Company or any of its officers, employees or representatives is responsible.

6.8 Attorneys' Fees. If any action at law or in equity (including arbitration) is necessary to enforce or interpret the terms of any of the Transaction Agreements, the prevailing party shall be entitled to reasonable attorneys' fees, costs and necessary disbursements in addition to any other relief to which such party may be entitled.

6.9 Amendments and Waivers. Except as set forth in Section 1.3 of this Agreement, any term of this Agreement may be amended, terminated or waived only with the written consent of the Company and the holders of at least a majority of the then-outstanding Shares. Any amendment or waiver effected in accordance with this Section 6.9 shall be binding upon the Purchasers and each transferee of the Shares (or the Common Stock issuable upon conversion thereof), each future holder of all such securities, and the Company.

6.10 Severability. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision.

6.11 Delays or Omissions. No delay or omission to exercise any right, power or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power or remedy of such non-breaching or non-defaulting party nor shall it be construed to be a waiver of any such breach or default, or an acquiescence therein, or of or in any similar breach or default thereafter occurring; nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. Any waiver, permit, consent or approval of any kind or character on the part of any party of any breach or default under this Agreement, or any waiver on the part of any party of any provisions or conditions of this Agreement, must be in writing and shall be effective only to the extent specifically set forth in such writing. All remedies, either under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

6.12 Entire Agreement. This Agreement (including the Exhibits hereto), the Restated Certificate and the other Transaction Agreements constitute the full and entire understanding and agreement between the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties are expressly canceled.

6.13 Waiver of Conflicts. Each party to this Agreement acknowledges that Neal, Gerber & Eisenberg LLP, counsel for the Company, has in the past performed and may continue to perform legal services for certain of the Purchasers and existing Company investors, officers and directors in matters unrelated to the transactions described in this Agreement, including the representation of such parties in venture capital financings and other matters. Accordingly, each party to this Agreement hereby (a) acknowledges that they have had an opportunity to ask for information relevant to this disclosure; and (b) gives its informed consent to Neal, Gerber & Eisenberg LLP's representation of the Company in this Agreement and the transactions contemplated hereby and in other matters, and its representation of such other parties in unrelated matters.

**IN WITNESS WHEREOF**, the parties have executed this Series B Preferred Stock Purchase Agreement as of the date first written above.

**THE COMPANY:**

NANOTOPE, INC.

By: /s/ Christopher Anzalone  
Name: Christopher Anzalone  
Title: President

Address:  
8025 Lamon Avenue  
Suite 450  
Skokie, IL 60077

[Signature page to Series B Preferred Stock Purchase Agreement]

**PURCHASERS:**

ARROWHEAD RESEARCH CORPORATION

By: /s/ Paul McDonnel  
Name: Paul McDonnel  
Title: Chief Financial Officer

Address:  
201 South Lake Avenue  
Suite 703  
Pasadena, CA 91101

[Signature page to Series B Preferred Stock Purchase Agreement]

**PURCHASERS:**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

[Signature page to Series B Preferred Stock Purchase Agreement]

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**SECOND AMENDED AND RESTATED  
INVESTORS' RIGHTS AGREEMENT**

THIS SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT is made as of the 23rd day of July, 2008, by and among Nanotope, Inc., a Delaware corporation (the "**Company**"), each of the investors listed on Schedule A hereto, each of which is referred to in this Agreement as an "**Investor**", each of the stockholders listed on Schedule B hereto, each of whom is referred to herein as a "**Key Holder**" and any Additional Purchaser (as defined in the Purchase Agreement) that becomes a party to this Agreement in accordance with Section 5.9 hereof.

**RECITALS**

**WHEREAS**, certain of the Investors (the "**Existing Investors**") hold shares of the Company's Series A Preferred Stock and possess registration rights, information rights, rights of first offer, and other rights pursuant to an Amended and Restated Investors' Rights Agreement dated as of March 31, 2006 between the Company and such Investors (the "**Prior Agreement**"); and

**WHEREAS**, the Existing Investors are holders of at least majority of the Registrable Securities of the Company (as defined in the Prior Agreement), and desire to amend and restate the Prior Agreement in its entirety and to accept the rights created pursuant to this Agreement in lieu of the rights granted to them under the Prior Agreement; and

**WHEREAS**, certain of the Investors are parties to that certain Series B Preferred Stock Purchase Agreement of even date herewith between the Company and certain of the Investors (the "**Purchase Agreement**"), under which certain of the Company's and such Investors' obligations are conditioned upon the execution and delivery of this Agreement by such Investors, Existing Investors holding at least a majority of the Registrable Securities, and the Company;

**NOW, THEREFORE**, the Existing Investors hereby agree that the Prior Agreement shall be amended and restated, and the parties to this Agreement further agree as follows:

1. **Definitions.** For purposes of this Agreement:

1.1 "**Affiliate**" means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including without limitation any general partner, managing member, officer or director of such Person or any venture capital fund now or hereafter existing that is controlled by one or more general partners or managing members of, or shares the same management company with, such Person.

1.2 "**Common Stock**" means shares of the Company's common stock, par value \$0.001 per share.

1.3 "**Damages**" means any loss, damage, or liability (joint or several) to which a party hereto may become subject under the Securities Act, the Exchange Act, or other federal or state law, insofar as such loss, damage, or liability (or any action in respect thereof)

arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in any registration statement of the Company, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (ii) an omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (iii) any violation or alleged violation by the indemnifying party (or any of its agents or Affiliates) of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act, or any state securities law.

1.4 “**Derivative Securities**” means any securities or rights convertible into, or exercisable or exchangeable for (in each case, directly or indirectly), Common Stock, including options and warrants.

1.5 “**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

1.6 “**Excluded Registration**” means (i) a registration relating to the sale of securities to employees of the Company or a subsidiary pursuant to a stock option, stock purchase, or similar plan; (ii) a registration relating to an SEC Rule 145 transaction; (iii) a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities; or (iv) a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

1.7 “**Form S-1**” means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

1.8 “**Form S-2**” means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

1.9 “**Form S-3**” means such form under the Securities Act as in effect on the date hereof or any registration form under the Securities Act subsequently adopted by the SEC that permits incorporation of substantial information by reference to other documents filed by the Company with the SEC.

1.10 “**GAAP**” means generally accepted accounting principles in the United States.

1.11 “**Holder**” means any holder of Registrable Securities who is a party to this Agreement.

1.12 “**Immediate Family Member**” means a child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including adoptive relationships, of a natural person referred to herein.

- 1.13 “**Initiating Holders**” means, collectively, Holders who properly initiate a registration request under this Agreement.
- 1.14 “**IPO**” means the Company’s first underwritten public offering of its Common Stock under the Securities Act.
- 1.15 “**Key Employee**” means any executive-level employee (including division director and vice president-level positions) as well as any employee who, either alone or in concert with others, develops, invents, programs, or designs any Company Intellectual Property (as defined in the Purchase Agreement).
- 1.16 “**Key Holder Registrable Securities**” means (i) the 3,534,700 shares of Common Stock held by the Key Holders, and (ii) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of such shares.
- 1.17 “**Major Investor**” means any Investor that, individually or together with such Investor’s Affiliates, holds at least 500,000 shares of Registrable Securities (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof).
- 1.18 “**Morningside**” means Morningside Venture Investments Ltd. and members of the Morningside group of companies.
- 1.19 “**Morningside Director**” means the director of the Company appointed by Morningside Venture Investments Ltd. pursuant to the terms of the Second Amended and Restated Voting Agreement of even date herewith by and among the Company and the stockholders of the Company party thereto.
- 1.20 “**New Securities**” means, collectively, equity securities of the Company, whether or not currently authorized, as well as rights, options, or warrants to purchase such equity securities, or securities of any type whatsoever that are, or may become, convertible or exchangeable into or exercisable for such equity securities.
- 1.21 “**Person**” means any individual, corporation, partnership, trust, limited liability company, association or other entity.
- 1.22 “**Preferred Stock**” means, collectively, shares of the Company’s Series A Preferred Stock and Series B Preferred Stock.
- 1.23 “**Registrable Securities**” means (i) the Common Stock issuable or issued upon conversion of the Series A Preferred Stock; (ii) the Common Stock issuable or issued upon conversion of the Series B Preferred Stock; (iii) any Common Stock, or any Common Stock issued or issuable (directly or indirectly) upon conversion and/or exercise of any other securities of the Company, acquired by the Investors after the date hereof; (iv) the Key Holder Registrable Securities; and (iv) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in clauses (i), (ii) and (iii)

above; excluding in all cases, however, any Registrable Securities sold by a Person in a transaction in which the applicable rights under this Agreement are not assigned pursuant to Section 5.1, and excluding for purposes of Section 2 any shares for which registration rights have terminated pursuant to Section 2.12 of this Agreement.

1.24 “**Registrable Securities then outstanding**” means the number of shares determined by adding the number of shares of outstanding Common Stock that are Registrable Securities and the number of shares of Common Stock issuable (directly or indirectly) pursuant to then exercisable and/or convertible securities that are Registrable Securities.

1.25 “**Restricted Securities**” means the securities of the Company required to bear the legend set forth in Section 2.12(b) hereof.

1.26 “**SEC**” means the Securities and Exchange Commission.

1.27 “**SEC Rule 144**” means Rule 144 promulgated by the SEC under the Securities Act.

1.28 “**SEC Rule 144(k)**” means Rule 144(k) promulgated by the SEC under the Securities Act.

1.29 “**SEC Rule 145**” means Rule 145 promulgated by the SEC under the Securities Act.

1.30 “**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

1.31 “**Selling Expenses**” means all underwriting discounts, selling commissions, and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for any Holder, except for the fees and disbursements of the Selling Holder Counsel borne and paid by the Company as provided in Section 2.6.

1.32 “**Series A Preferred Stock**” means shares of the Company’s Series A Preferred Stock, par value \$0.001 per share.

1.33 “**Series B Director**” means any director of the Company that the holders of record of the Series B Preferred Stock are entitled to elect pursuant to the Company’s Certificate of Incorporation.

1.34 “**Series B Preferred Stock**” means shares of the Company’s Series B Preferred Stock, par value \$0.001 per share.

2. Registration Rights. The Company covenants and agrees as follows:

2.1 Demand Registration.

(a) Form S-1 Demand. If at any time after the earlier of (i) seven (7) years after the date of this Agreement or (ii) six (6) months after the effective date of the registration statement for the IPO, the Company receives a request from Holders of forty percent (40%) of the Registrable Securities then outstanding (or a lesser percent if the anticipated aggregate offering price, net of Selling Expenses, would exceed \$6 million) that the Company file a Form S-1 registration statement, then the Company shall (i) within ten (10) days after the date such request is given, give notice thereof (the “**Demand Notice**”) to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within sixty (60) days after the date such request is given by the Initiating Holders, file a Form S-1 registration statement under the Securities Act covering all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the Demand Notice is given, and in each case, subject to the limitations of Section 2.1(c) and Section 2.3.

(b) Form S-3 Demand. If at any time when it is eligible to use a Form S-3 registration statement, the Company receives a request from Holders of at least \$2 million of Registrable Securities then outstanding that the Company file a Form S-3 registration statement with respect to outstanding Registrable Securities of such Holders, then the Company shall (i) within ten (10) days after the date such request is given, give a Demand Notice to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within forty-five (45) days after the date such request is given by the Initiating Holders, file a Form S-3 registration statement under the Securities Act covering all Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the Demand Notice is given, and in each case, subject to the limitations of Section 2.1(c) and Section 2.3.

(c) Notwithstanding the foregoing obligations, if the Company furnishes to Holders requesting a registration pursuant to this Section 2.1 a certificate signed by the Company’s chief executive officer stating that in the good faith judgment of the Company’s Board of Directors it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential; or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act, then the Company shall have the right to defer taking action with respect to such filing, and any time periods with respect to filing or effectiveness thereof shall be tolled correspondingly, for a period of not more than ninety (90) days after the request of the Initiating Holders is given; provided, however, that the Company may not invoke this right more than twice in any twelve (12) month period.

(d) The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(a) (i) during the period that is sixty (60) days before the Company’s good faith estimate of the date of filing of, and ending on a date that is one hundred eighty (180) days after the effective date of, a Company-initiated registration, provided, that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; (ii) after the Company has effected two

registrations pursuant to Section 2.1(a); or (iii) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Section 2.1(b). The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(b) during the period that is thirty (30) days before the Company's good faith estimate of the date of filing of, and ending on a date that is six (6) months after the effective date of, a Company-initiated registration, provided, that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective. A registration shall not be counted as "effected" for purposes of this Section 2.1(d) until such time as the applicable registration statement has been declared effective by the SEC, unless the Initiating Holders withdraw their request for such registration, elect not to pay the registration expenses therefor, and forfeit their right to one demand registration statement pursuant to Section 2.6, in which case such withdrawn registration statement shall be counted as "effected" for purposes of this Section 2.1(d).

**2.2 Company Registration.** If the Company proposes to register (including, for this purpose, a registration effected by the Company for stockholders other than the Holders) any of its Common Stock under the Securities Act in connection with the public offering of such securities solely for cash (other than in an Excluded Registration), the Company shall, at such time, promptly give each Holder notice of such registration. Upon the request of each Holder given within twenty (20) days after such notice is given by the Company, the Company shall, subject to the provisions of Section 2.3, cause to be registered all of the Registrable Securities that each such Holder has requested to be included in such registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.2 before the effective date of such registration, whether or not any Holder has elected to include Registrable Securities in such registration. The expenses (other than Selling Expenses) of such withdrawn registration shall be borne by the Company in accordance with Section 2.6.

**2.3 Underwriting Requirements.**

(a) If, pursuant to Section 2.1, the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Section 2.1, and the Company shall include such information in the Demand Notice. The underwriter(s) will be selected by the Company and shall be reasonably acceptable to a majority in interest of the Initiating Holders. In such event, the right of any Holder to include such Holder's Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Section 2.4(e)) enter into an underwriting agreement in customary form with the underwriter(s) selected for such underwriting. Notwithstanding any other provision of this Section 2.3, if the underwriter advises the Initiating Holders in writing that marketing factors require a limitation on the number of shares to be underwritten, then the Initiating Holders shall so advise all Holders of Registrable Securities that otherwise would be underwritten pursuant hereto, and the number of Registrable Securities that may be included in the underwriting shall be allocated among such Holders of Registrable Securities, including the Initiating Holders, in proportion (as nearly as practicable) to the number of Registrable Securities owned by each Holder or in such other proportion as shall

mutually be agreed to by all such selling Holders; provided, however, that the number of Registrable Securities held by the Holders to be included in such underwriting shall not be reduced unless all other securities are first entirely excluded from the underwriting. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares.

(b) In connection with any offering involving an underwriting of shares of the Company's capital stock pursuant to Section 2.2, the Company shall not be required to include any of the Holders' Registrable Securities in such underwriting unless the Holders accept the terms of the underwriting as agreed upon between the Company and its underwriters, and then only in such quantity as the underwriters in their sole discretion determine will not jeopardize the success of the offering by the Company. If the total number of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the number of securities to be sold (other than by the Company) that the underwriters in their reasonable discretion determine is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, which the underwriters and the Company in their sole discretion determine will not jeopardize the success of the offering. If the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be allocated among the selling Holders in proportion (as nearly as practicable to) the number of Registrable Securities owned by each selling Holder or in such other proportions as shall mutually be agreed to by all such selling Holders. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares. Notwithstanding the foregoing, in no event shall (i) the number of Registrable Securities included in the offering be reduced unless all other securities (other than securities to be sold by the Company) are first entirely excluded from the offering, (ii) the number of Registrable Securities included in the offering be reduced below twenty-five percent (25%) of the total number of securities included in such offering, unless such offering is the IPO, in which case the selling Holders may be excluded further if the underwriters make the determination described above and no other stockholder's securities are included in such offering or (iii) notwithstanding (ii) above, any Registrable Securities which are not Key Holder Registrable Securities be excluded from such underwriting unless all Key Holder Registrable Securities are first excluded from such offering. For purposes of the provision in this Section 2.3(b) concerning apportionment, for any selling Holder that is a partnership, limited liability company, or corporation, the partners, members, retired partners, retired members, stockholders, and Affiliates of such Holder, or the estates and Immediate Family Members of any such partners, retired partners, members, and retired members and any trusts for the benefit of any of the foregoing Persons, shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate number of Registrable Securities owned by all Persons included in such "selling Holder," as defined in this sentence.

(c) For purposes of Section 2.1, a registration shall not be counted as "effected" if, as a result of an exercise of the underwriter's cutback provisions in Section 2.3(a), fewer than fifty percent (50%) of the total number of Registrable Securities that Holders have requested to be included in such registration statement are actually included.

2.4 Obligations of the Company. Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its commercially reasonable efforts to cause such registration statement to become effective and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to one hundred twenty (120) days or, if earlier, until the distribution contemplated in the registration statement has been completed; provided, however, that (i) such one hundred twenty (120) day period shall be extended for a period of time equal to the period the Holder refrains, at the request of an underwriter of Common Stock (or other securities) of the Company, from selling any securities included in such registration, and (ii) in the case of any registration of Registrable Securities on Form S-3 that are intended to be offered on a continuous or delayed basis, subject to compliance with applicable SEC rules, such one hundred twenty (120) day period shall be extended for up to thirty (30) days, if necessary, to keep the registration statement effective until all such Registrable Securities are sold;

(b) prepare and file with the SEC such amendments and supplements to such registration statement, and the prospectus used in connection with such registration statement, as may be necessary to comply with the Securities Act in order to enable the disposition of all securities covered by such registration statement;

(c) furnish to the selling Holders such numbers of copies of a prospectus, including a preliminary prospectus, as required by the Securities Act, and such other documents as the Holders may reasonably request in order to facilitate their disposition of their Registrable Securities;

(d) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the selling Holders; provided that the Company shall not be required to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the underwriter of such offering;

(f) use its commercially reasonable efforts to cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange or trading system and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(g) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and provide a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;



(h) promptly make available for inspection by the selling Holders, any underwriter participating in any disposition pursuant to such registration statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent, in each case, as necessary or advisable to verify the accuracy of the information in such registration statement and to conduct appropriate due diligence in connection therewith;

(i) notify each selling Holder, promptly after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed; and

(j) after such registration statement becomes effective, notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus.

**2.5 Furnish Information.** It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as is reasonably required to effect the registration of such Holder's Registrable Securities.

**2.6 Expenses of Registration.** All expenses (other than Selling Expenses) incurred in connection with registrations, filings, or qualifications pursuant to Section 2, including all registration, filing, and qualification fees; printers' and accounting fees; fees and disbursements of counsel for the Company; and the reasonable fees and disbursements, not to exceed \$25,000, of one counsel for the selling Holders ("**Selling Holder Counsel**"), shall be borne and paid by the Company; provided, however, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 2.1 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all selling Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless the Holders of a majority of the Registrable Securities agree to forfeit their right to one registration pursuant to Section 2.1(a) or Section 2.1(b), as the case may be; provided further that if, at the time of such withdrawal, the Holders shall have learned of a material adverse change in the condition, business, or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness after learning of such information then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one registration pursuant to Section 2.1(a) or Section 2.1(b). All Selling Expenses relating to Registrable Securities registered pursuant to this Section 2 shall be borne and paid by the Holders pro rata on the basis of the number of Registrable Securities registered on their behalf.

**2.7 Delay of Registration.** No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any registration pursuant to this Agreement as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

**2.8 Indemnification.** If any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, and the partners, members, officers, directors, and stockholders of each such Holder; legal counsel and accountants for each such Holder; any underwriter (as defined in the Securities Act) for each such Holder; and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any Damages, and the Company will pay to each such Holder, underwriter, controlling Person, or other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable for any Damages to the extent that they arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of any such Holder, underwriter, controlling Person, or other aforementioned Person expressly for use in connection with such registration.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, and each of its directors, each of its officers who has signed the registration statement, each Person (if any), who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company, any underwriter (as defined in the Securities Act), any other Holder selling securities in such registration statement, and any controlling Person of any such underwriter or other Holder, against any Damages, in each case only to the extent that such Damages arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of such selling Holder expressly for use in connection with such registration; and each such selling Holder will pay to the Company and each other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; and provided further that in no event shall the aggregate amounts payable by any Holder by way of indemnity or contribution under Sections 2.8(b) and 2.8(d) exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of fraud or willful misconduct by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, give the indemnifying party notice of the commencement thereof. The indemnifying party shall have the right to participate in such action and, to the extent the indemnifying party so desires, participate jointly with any other indemnifying party to which notice has been given, and to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such action. The failure to give notice to the indemnifying party within a reasonable time of the commencement of any such action shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8, to the extent that such failure materially prejudices the indemnifying party's ability to defend such action. The failure to give notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) To provide for just and equitable contribution to joint liability under the Securities Act in any case in which either (i) any party otherwise entitled to indemnification hereunder makes a claim for indemnification pursuant to this Section 2.8 but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case, notwithstanding the fact that this Section 2.8 provides for indemnification in such case, or (ii) contribution under the Securities Act may be required on the part of any party hereto for which indemnification is provided under this Section 2.8, then, and in each such case, such parties will contribute to the aggregate losses, claims, damages, liabilities, or expenses to which they may be subject (after contribution from others) in such proportion as is appropriate to reflect the relative fault of each of the indemnifying party and the indemnified party in connection with the statements, omissions, or other actions that resulted in such loss, claim, damage, liability, or expense, as well as to reflect any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or allegedly untrue statement of a material fact, or the omission or alleged omission of a material fact, relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission; provided, however, that, in any such case, (x) no Holder will be required to contribute any amount in excess of the public offering price of all such Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Section 2.8(d), when combined with the amounts paid or payable by such Holder pursuant to Section 2.8(b), exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of willful misconduct or fraud by such Holder.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

(f) Unless otherwise superseded by an underwriting agreement entered into in connection with the underwritten public offering, the obligations of the Company and Holders under this Section 2.8 shall survive the completion of any offering of Registrable Securities in a registration under this Section 2, and otherwise shall survive the termination of this Agreement.

**2.9 Reports Under Exchange Act.** With a view to making available to the Holders the benefits of SEC Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company shall:

(a) make and keep available adequate current public information, as those terms are understood and defined in SEC Rule 144, at all times after the effective date of the registration statement filed by the Company for the IPO;

(b) use commercially reasonable efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act (at any time after the Company has become subject to such reporting requirements); and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) to the extent accurate, a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after ninety (90) days after the effective date of the registration statement filed by the Company for the IPO), the Securities Act, and the Exchange Act (at any time after the Company has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after the Company so qualifies); (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company; and (iii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration (at any time after the Company has become subject to the reporting requirements under the Exchange Act) or pursuant to Form S-3 (at any time after the Company so qualifies to use such form).

**2.10 Limitations on Subsequent Registration Rights.** From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of a majority of the Registrable Securities then outstanding, enter into any agreement with any holder or prospective holder of any securities of the Company that would allow such holder or prospective holder (i) to include such securities in any registration unless, under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the number of the Registrable Securities of the Holders that are included or (ii) to initiate a demand for

registration of any securities held by such holder or prospective holder; provided that this limitation shall not apply to any additional Investor who becomes a party to this Agreement in accordance with Section 5.9.

2.11 “Market Stand-off” Agreement. Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the registration by the Company of shares of its Common Stock or any other equity securities under the Securities Act on a registration statement on Form S-1, Form S-2, or Form S-3, and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days) (i) lend; offer; pledge; sell; contract to sell; sell any option or contract to purchase; purchase any option or contract to sell; grant any option, right, or warrant to purchase; or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock (whether such shares or any such securities are then owned by the Holder or are thereafter acquired) or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise. The foregoing provisions of this Section 2.11 shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall be applicable to the Holders only if all officers and directors are subject to the same restrictions and the Company uses commercially reasonable efforts to obtain a similar agreement from all stockholders individually owning more than one percent (1%) of the Company’s outstanding Common Stock (after giving effect to conversion into Common Stock of all outstanding Preferred Stock). The underwriters in connection with such registration are intended third-party beneficiaries of this Section 2.11 and shall have the right, power, and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in connection with such registration that are consistent with this Section 2.11 or that are necessary to give further effect thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply pro rata to all Holders subject to such agreements, based on the number of shares subject to such agreements. The restrictions set forth in this Section 2.11 shall in any event terminate two (2) years after the date of the Company’s IPO.

2.12 Restrictions on Transfer.

(a) The Preferred Stock and the Registrable Securities shall not be sold, pledged, or otherwise transferred, and the Company shall not recognize and shall issue stop-transfer instructions to its transfer agent with respect to any such sale, pledge, or transfer, except upon the conditions specified in this Agreement, which conditions are intended to ensure compliance with the provisions of the Securities Act. A transferring Holder will cause any proposed purchaser, pledgee, or transferee of the Preferred Stock and the Registrable Securities held by such Holder to agree to take and hold such securities subject to the provisions and upon the conditions specified in this Agreement.

(b) Each certificate or instrument representing (i) the Preferred Stock, (ii) the Registrable Securities, and (iii) any other securities issued in respect of the securities referenced in clauses (i) and (ii), upon any stock split, stock dividend, recapitalization, merger, consolidation, or similar event, shall (unless otherwise permitted by the provisions of Section 2.120) be stamped or otherwise imprinted with a legend substantially in the following form:

THE SECURITIES REPRESENTED HEREBY HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. SUCH SHARES MAY NOT BE SOLD, PLEDGED, OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR A VALID EXEMPTION FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

THE SECURITIES REPRESENTED HEREBY MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

The Holders consent to the Company making a notation in its records and giving instructions to any transfer agent of the Restricted Securities in order to implement the restrictions on transfer set forth in this Section 2.12.

(c) The holder of each certificate representing Restricted Securities, by acceptance thereof, agrees to comply in all respects with the provisions of this Section 2. Before any proposed sale, pledge, or transfer of any Restricted Securities, unless there is in effect a registration statement under the Securities Act covering the proposed transaction, the Holder thereof shall give notice to the Company of such Holder's intention to effect such sale, pledge, or transfer. Each such notice shall describe the manner and circumstances of the proposed sale, pledge, or transfer in sufficient detail and, if reasonably requested by the Company, shall be accompanied at such Holder's expense by either (i) a written opinion of legal counsel who shall, and whose legal opinion shall, be reasonably satisfactory to the Company, addressed to the Company, to the effect that the proposed transaction may be effected without registration under the Securities Act; (ii) a "no action" letter from the SEC to the effect that the proposed sale, pledge, or transfer of such Restricted Securities without registration will not result in a recommendation by the staff of the SEC that action be taken with respect thereto; or (iii) any other evidence reasonably satisfactory to counsel to the Company to the effect that the proposed sale, pledge, or transfer of the Restricted Securities may be effected without registration under the Securities Act, whereupon the Holder of such Restricted Securities shall be entitled to sell, pledge, or transfer such Restricted Securities in accordance with the terms of the notice given by the Holder to the Company. The Company will not require such a legal opinion or "no action" letter (x) in any transaction in compliance with SEC Rule 144 or (y) in any transaction in which such Holder distributes Restricted Securities to an Affiliate of such Holder for no consideration; provided that each transferee agrees in writing to be subject to the terms of this Section 2.12. Each certificate or instrument evidencing the Restricted Securities transferred as above provided shall bear, except if such transfer is made pursuant to SEC Rule 144, the appropriate restrictive legend set forth in Section 2.12(b), except that such certificate shall not bear such restrictive legend if, in the opinion of counsel for such Holder and the Company, such legend is not required in order to establish compliance with any provisions of the Securities Act.

2.13 Termination of Registration Rights. The right of any Holder to request registration or inclusion of Registrable Securities in any registration pursuant to Section 2.1 or Section 2.2 shall terminate upon the earliest to occur of:

- (a) the closing of a Deemed Liquidation Event, as such term is defined in the Company's Certificate of Incorporation; and
- (b) when all of such Holder's Registrable Securities could be sold without restriction under SEC Rule 144(k) within a ninety (90) day period.

### 3. Information Rights.

3.1 Delivery of Financial Statements. The Company shall deliver to each Major Investor, provided that the Board of Directors has not reasonably determined that such Major Investor is a competitor of the Company:

(a) as soon as practicable, but in any event within one hundred twenty (120) days after the end of each fiscal year of the Company, (i) a balance sheet as of the end of such year, (ii) statements of income and of cash flows for such year, and (iii) a statement of stockholders' equity as of the end of such year, all such financial statements audited and certified by independent public accountants of nationally recognized standing selected by the Company;

(b) as soon as practicable, but in any event within forty-five (45) days after the end of each of the first three (3) quarters of each fiscal year of the Company, unaudited statements of income and of cash flows for such fiscal quarter, and an unaudited balance sheet and a statement of stockholders' equity as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(c) as soon as practicable, but in any event within forty-five (45) days after the end of each of the first three (3) quarters of each fiscal year of the Company, a statement showing the number of shares of each class and series of capital stock and securities convertible into or exercisable for shares of capital stock outstanding at the end of the period, the Common Stock issuable upon conversion or exercise of any outstanding securities convertible or exercisable for Common Stock and the exchange ratio or exercise price applicable thereto, and the number of shares of issued stock options and stock options not yet issued but reserved for issuance, if any, all in sufficient detail as to permit the Major Investors to calculate their respective percentage equity ownership in the Company, and certified by the chief financial officer or chief executive officer of the Company as being true, complete, and correct;

(d) as soon as practicable, but in any event within thirty (30) days of the end of each month, an unaudited income statement and statement of cash flows for such month, and an unaudited balance sheet and statement of stockholders' equity as of the end of such month, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP); and

(e) as soon as practicable, but in any event thirty (30) days before the end of each fiscal year, a budget and business plan for the next fiscal year (collectively, the “**Budget**”), prepared on a monthly basis, including balance sheets, income statements, and statements of cash flow for such months and, promptly after prepared, any other budgets or revised budgets prepared by the Company.

Notwithstanding anything else in this Section 3.1 to the contrary, the Company shall not be obligated under this Section 3.1 to provide information (i) that the Company, as determined in the sole discretion of its Chief Executive Officer, determines in good faith may harm the Company’s competitive position or (ii) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

If, for any period, the Company has any subsidiary whose accounts are consolidated with those of the Company, then in respect of such period the financial statements delivered pursuant to the foregoing sections shall be the consolidated and consolidating financial statements of the Company and all such consolidated subsidiaries.

Notwithstanding anything else in this Section 3.1 to the contrary, the Company may cease providing the information set forth in this Section 3.1 during the period starting with the date sixty (60) days before the Company’s good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; provided that the Company’s covenants under this Section 3.1 shall be reinstated at such time as the Company is no longer actively employing its commercially reasonable efforts to cause such registration statement to become effective.

3.2 Inspection. The Company shall permit each Major Investor (provided that the Board of Directors has not reasonably determined that such Major Investor is a competitor of the Company), at such Major Investor’s expense, to visit and inspect the Company’s properties; examine its books of account and records; and discuss the Company’s affairs, finances, and accounts with its officers, during normal business hours of the Company as may be reasonably requested by the Major Investor; provided, however, that the Company shall not be obligated pursuant to this Section 3.2 to provide access to any information that it reasonably and in good faith considers to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form acceptable to the Company) or the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

3.3 Confidentiality. Each Investor agrees that such Investor will keep confidential and will not disclose, divulge, or use for any purpose (other than to monitor its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement (including notice of the Company’s intention to file a registration statement), unless such confidential information (a) is known or becomes known to the public in general (other than as a result of a breach of this Section 3.3 by such Investor), (b) is or has been independently developed or conceived by the Investor without use of the Company’s confidential information, or (c) is or has been made known or disclosed to the Investor by a third party



without a breach of any obligation of confidentiality such third party may have to the Company; provided, however, that an Investor may disclose confidential information (i) to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company; (ii) to any prospective purchaser of any Registrable Securities from such Investor, if such prospective purchaser agrees to be bound by the provisions of this Section 3.3; (iii) to any Affiliate, partner, member, stockholder, or wholly owned subsidiary of such Investor in the ordinary course of business, provided that such Investor informs such Person that such information is confidential and directs such Person to maintain the confidentiality of such information; or (iv) as may otherwise be required by law, provided that the Investor promptly notifies the Company of such disclosure and takes reasonable steps to minimize the extent of any such required disclosure.

#### 4. Additional Covenants.

4.1 Insurance. The Company shall use its commercially reasonable efforts to obtain, within ninety (90) days of the date hereof, from financially sound and reputable insurers Directors and Officers liability insurance and term “key-person” insurance on Samuel I. Stupp, Ph.D., each in an amount and on terms and conditions satisfactory to the Board of Directors, and will use commercially reasonable efforts to cause such insurance policies to be maintained until such time as the Board of Directors determines that such insurance should be discontinued. The key-person policy shall name the Company as loss payee, and neither policy shall be cancelable by the Company without prior approval by the Board of Directors.

4.2 Employee Agreements. The Company will cause (i) each person now or hereafter employed by it or by any subsidiary (or engaged by the Company or any subsidiary as a consultant/independent contractor) with access to confidential information and/or trade secrets to enter into a nondisclosure and proprietary rights assignment agreement and (ii) each Key Employee to enter into a one (1) year noncompetition and nonsolicitation agreement, each in a form reasonably acceptable to the Investors holding Series B Preferred Stock. In addition, the Company shall not amend, modify, terminate, waive, or otherwise alter, in whole or in part, any of the above-referenced agreements or any restricted stock agreement between the Company and any employee, without the consent of the Series B Director.

#### 4.3 Matters Requiring Investor Director Approval.

(a) Matters Requiring Morningside Director Approval So long as Morningside is entitled to elect the Morningside Director, the Company hereby covenants and agrees with each of the Investors that it shall not, (x) without approval of the Board of Directors at a duly convened meeting or by unanimous written consent or (y) if the Morningside Director votes against such action:

(i) enter into or be a party to any transaction with any director, officer, or employee of the Company or any “associate” (as defined in Rule 12b-2 promulgated under the Exchange Act) of any such Person, except for transactions contemplated by this Agreement, the Purchase Agreement and Transaction Agreements (as such term is defined in the Purchase Agreement);

(ii) change the principal business of the Company, enter new lines of business, or exit the current line of business; or

(iii) sell, assign, license, pledge, or encumber material technology or intellectual property, other than licenses granted in the ordinary course of business.

(b) Matters Requiring Series B Director Approval. So long as the holders of Series B Preferred Stock are entitled to elect the Series B Director, the Company hereby covenants and agrees with each of the Investors that it shall not, without approval of the Board of Directors, which approval must include the affirmative vote of the Series B Director:

(i) make, or permit any subsidiary to make, any loan or advance to, or own any stock or other securities of, any subsidiary or other corporation, partnership, or other entity unless it is wholly owned by the Company;

(ii) make, or permit any subsidiary to make, any loan or advance to any Person, including, without limitation, any employee or director of the Company or any subsidiary, except advances and similar expenditures in the ordinary course of business or under the terms of an employee stock or option plan approved by the Board of Directors;

(iii) guarantee, directly or indirectly, or permit any subsidiary to guarantee, directly or indirectly, any indebtedness except for trade accounts of the Company or any subsidiary arising in the ordinary course of business;

(iv) make any investment, through the direct or indirect holding of securities or otherwise, other than investments in prime commercial paper, money market funds, certificates of deposit in any United States bank having a net worth in excess of \$100,000,000 or obligations issued or guaranteed by the United States of America, in each case having a maturity not in excess of two years;

(v) incur any aggregate indebtedness outside the ordinary course of business that is not already included in a budget approved by the Board of Directors, other than trade credit incurred in the ordinary course of business;

(vi) otherwise enter into or be a party to any transaction with any director, officer, or employee of the Company or any “associate” (as defined in Rule 12b-2 promulgated under the Exchange Act) of any such Person, except for transactions contemplated by this Agreement, the Purchase Agreement and the Transaction Agreements (as such term is defined in the Purchase Agreement);

(vii) hire, terminate, or change the compensation of the executive officers, including approving any option grants or stock awards to executive officers;

(viii) change the principal business of the Company, enter new lines of business, or exit the current line of business; or

(ix) sell, assign, license, pledge, or encumber material technology or intellectual property, other than licenses granted in the ordinary course of business.

4.4 Board Matters. Unless otherwise determined by the vote of a majority of the directors then in office, the Board of Directors shall meet at least quarterly in accordance with an agreed-upon schedule. The Company shall reimburse the nonemployee directors for all reasonable out-of-pocket domestic travel expenses incurred (consistent with the Company's travel policy) in connection with attending meetings of the Board of Directors.

4.5 Successor Indemnification. If the Company or any of its successors or assignees consolidates with or merges into any other Person and is not the continuing or surviving corporation or entity of such consolidation or merger, then to the extent necessary, proper provision shall be made so that the successors and assignees of the Company assume the obligations of the Company with respect to indemnification of members of the Board of Directors as in effect immediately before such transaction, whether such obligations are contained in the Company's Bylaws, its Certificate of Incorporation, or elsewhere, as the case may be.

4.6 Termination of Covenants. The covenants set forth in this Section 4, except for Section 4.5, shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act or (iii) upon a Deemed Liquidation Event, as such term is defined in the Company's Certificate of Incorporation, whichever event occurs first.

## 5. Miscellaneous.

5.1 Successors and Assigns. The rights under this Agreement may be assigned (but only with all related obligations) by a Holder to a transferee of Registrable Securities that (i) is an Affiliate of a Holder; or (ii) is a Holder's Immediate Family Member or trust for the benefit of an individual Holder or one or more of such Holder's Immediate Family Members; provided, however, that (x) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee and the Registrable Securities with respect to which such rights are being transferred; and (y) such transferee agrees in a written instrument delivered to the Company to be bound by and subject to the terms and conditions of this Agreement, including the provisions of Section 2.11. For the purposes of determining the number of shares of Registrable Securities held by a transferee, the holdings of a transferee (1) that is an Affiliate or stockholder of a Holder; (2) who is a Holder's Immediate Family Member; or (3) that is a trust for the benefit of an individual Holder or such Holder's Immediate Family Member shall be aggregated together and with those of the transferring Holder; provided further that all transferees who would not qualify individually for assignment of rights shall have a single attorney-in-fact for the purpose of exercising any rights, receiving notices, or taking any action under this Agreement. The terms and conditions of this Agreement inure to the benefit of and are binding upon the respective successors and permitted assignees of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assignees any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein.

5.2 Governing Law. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of law.

5.3 Counterparts; Facsimile. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Agreement may also be executed and delivered by facsimile signature and in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

5.4 Titles and Subtitles. The titles and subtitles used in this Agreement are for convenience only and are not to be considered in construing or interpreting this Agreement.

5.5 Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of actual receipt or: (i) personal delivery to the party to be notified; (ii) when sent, if sent by electronic mail or facsimile during the recipient's normal business hours, and if not sent during normal business hours, then on the recipient's next business day; or (iii) three (1) business days after the business day of deposit with an internationally recognized overnight courier, freight prepaid, specifying next-day delivery, if available, with written verification of receipt. All communications shall be sent to the respective parties at their addresses as set forth on Schedule A or Schedule B (as applicable) hereto, or to the principal office of the Company and to the attention of the Chief Executive Officer, in the case of the Company, or to such email address, facsimile number, or address as subsequently modified by written notice given in accordance with this Section 5.5. All notices to the Company pursuant to this Section 5.5 shall be sent to Nanotope, Inc., 8025 Lamon Avenue, Suite 450, Skokie, IL 60077. If notice is given to the Company, a copy shall also be sent to Neal, Gerber & Eisenberg LLP, Two North LaSalle Street, Suite 2200, Chicago, IL 60602, Attention: Jon Wasserman, Facsimile Number (312) 269-1747.

5.6 Amendments and Waivers. Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of the Company and the holders of a majority of the Registrable Securities then outstanding; provided that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party. Notwithstanding the foregoing, this Agreement may not be amended or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, termination, or waiver applies to all Investors in the same fashion. Further, this Agreement may not be amended, and no provision hereof may be waived, in each case, in any way which would adversely affect the rights of the Key Holders hereunder in a manner disproportionate to any adverse effect such amendment or waiver would have on the rights of the Investors hereunder, without also the written consent of the holders of at least a majority of the Registrable Securities held by the Key Holders. The Company shall give prompt notice of any amendment or termination hereof or waiver hereunder to any party hereto that did not consent in writing to such

amendment, termination, or waiver. Any amendment, termination, or waiver effected in accordance with this Section 5.6 shall be binding on all parties hereto, regardless of whether any such party has consented thereto. No waivers of or exceptions to any term, condition, or provision of this Agreement, in any one or more instances, shall be deemed to be or construed as a further or continuing waiver of any such term, condition, or provision.

5.7 Severability. In case any one or more of the provisions contained in this Agreement is for any reason held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and such invalid, illegal, or unenforceable provision shall be reformed and construed so that it will be valid, legal, and enforceable to the maximum extent permitted by law.

5.8 Aggregation of Stock. All shares of Registrable Securities held or acquired by Affiliates shall be aggregated together for the purpose of determining the availability of any rights under this Agreement and such Affiliated persons may apportion such rights as among themselves in any manner they deem appropriate.

5.9 Additional Investors. Notwithstanding anything to the contrary contained herein, if the Company issues additional shares of the Company's Series B Preferred Stock after the date hereof, whether pursuant to the Purchase Agreement or otherwise, any purchaser of such shares of Series B Preferred Stock may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement, and thereafter shall be deemed an "Investor" for all purposes hereunder. No action or consent by the Investors shall be required for such joinder to this Agreement by such additional Investor, so long as such additional Investor has agreed in writing to be bound by all of the obligations as an "Investor" hereunder.

5.10 Entire Agreement. This Agreement (including any Schedules and Exhibits hereto) constitutes the full and entire understanding and agreement among the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties is expressly canceled. Upon the effectiveness of this Agreement, the Prior Agreement shall be deemed amended and restated and superseded and replaced in its entirety by this Agreement, and shall be of no further force or effect.

5.11 Delays or Omissions. No delay or omission to exercise any right, power, or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power, or remedy of such nonbreaching or nondefaulting party, nor shall it be construed to be a waiver of or acquiescence to any such breach or default, or to any similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. All remedies, whether under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

5.12 Acknowledgment. The Company acknowledges that the Investors are in the business of venture capital investing and therefore review the business plans and related proprietary information of many enterprises, including enterprises which may have products or services which compete directly or indirectly with those of the Company. Nothing in this Agreement shall preclude or in any way restrict the Investors from investing or participating in any particular enterprise whether or not such enterprise has products or services which compete with those of the Company.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**THE COMPANY:**

NANOTOPE, INC.

By: /s/ Christopher Anzalone  
Name: Christopher Anzalone  
Title: President and CEO

**INVESTORS:**

ARROWHEAD RESEARCH  
CORPORATION

By: /s/ Paul McDonnel  
Name: Paul McDonnel  
Title: Chief Financial Officer

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**KEY HOLDERS:**

BENET GROUP, LLC

Signature: /s/ Christopher Anzalone  
Name: Christopher Anzalone  
Title: Manager

By: \_\_\_\_\_

By: \_\_\_\_\_

MASA ENERGY, LLC

Signature: /s/ Paul McDonnel  
Name: Paul McDonnel  
Title: Chief Financial Officer

[Signature page to Second Amended and Restated Investor Rights Agreement]